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§91. On some new North American Musci.—C. F. AUSTIN.

1. *Bruchia Hallii* (n. sp.)—Plantæ humiles, gregariæ, fusco-virides; caule 1-3 lineari subsimplici gracili inferne microphylo, foliis lævissimis late ovatis erectis inferioribus appressis superioribus sensim subabrupte augentibus acutiusculis vel breviter acuminatis integerrimis, reti inferiori laxiusculo pellucido oblongo-hexagono vel subrhomboideo superiori angustissimo breviter fusiformi, costa mediocri versus apicem subexpansa percurrente vel leniter excurrente, capsula in pedicello recto exserta una cum collo breviter pyriformi-elliptica longiuscule rostrata, collo pro genere magis parvo in pedicellum sensim transeunte, calyptra lævi mitriformi (subcucullatave) basi lobata ad tertiam partem capsulæ vel ultra descendente: inflorescentia generis: statura *Br. flexuosæ*.

Near Houston, Texas, *E. Hall*.

2. *Bruchia Texana* (n. sp.)—Statura et habitu *Br. Hallii*; differt tamen caule breviori, foliis inferioribus angustioribus acuminatis flexuosis superioribus multum longius et abruptius acuminatis acumine angustissimo canaliculato siccitate flexuoso, costa superne multum magis dilatata, reti minore e cellulis infra medium folii angustioribus et longioribus supra hoc in illas minutissimas brevissimas minutim granulosas subraptim transeuntibus formato, capsula paulum brevius tenuiusque rostrata, collo crassiori longiori in pedicellum abrupte transeunte.

Near Houston, Texas, *E. Hall*.

3. *Gymnostomum Rauanum* (n. sp.)—Caulibus gregario-cæspitosis brevissimis fastigiatim divisis, foliis caulinis satis viridibus lineali-lanceolatis mucronato-acutis subcanaliculato-concavis basi excepta opacis sublævibus margine planis integerrimis, costa subdepressa excurrente, capsula in pedicello tenui mediocriter longo exserta ovali tenuissime texta siccitate irregulariter striato-costata truncata macrostoma, operculo valde deciduo in siccis lato valde depresso oblique rostrato, in humidis angustato conico et fere recte rostrato, annulo rubro partim ad operculum ac partim ad os capsulæ adhaerente, (peristomio nullo): inflorescentia ut in *Weisia viridula*.—*Weisia viridula*, var. *gymnostomoides*, *James in Herb. Porter* (fide *James*).

On clay banks, about Bethlehem, Pa. *E. A. Rau, Esq.*, and *Rev. F. Wollé*.

This species has much the general appearance of small forms of *Weisia viriduli*, but is readily distinguished by the total absence of a peristome, broader annulus, more delicate texture of the capsule, which is also shorter and wider mouthed, and by the less concave leaves plane on the margins, etc.

4. *Fissidens Closteri*, *Aust. Ms.; Sulliv. Icon. Suppl. ined.*—Plantæ exilissimæ gregariæ acaules; foliis minutissimis (circa 2 paribus) in gemmula appressis ovatis, laminarum duplicaturam vix excedente acuta minute apiculata apice subserrata, reti laxiusculo subquadrato, costa latiuscula tenui subdiffusa, capsula in pedicello  $\frac{1}{2}$ -1 $\frac{1}{2}$  lin. longo tenuissimo pallido exserta ovali ovatave siccitate (ore lato excepto) valde constricta, annulo valde inconspicuo cum operculo deciduo, operculo elongato-conico; peristomio generis; inflorescentia *F. exilis*.

On stones along woodland rivulets, on the Palisades, near Closter, New Jersey.

On account of the minute size of all its parts, this is probably the most inconspicuous of all known mosses, being invisible to the naked eye (in its native ravines) except with the aid of a strong and favorable light. It differs from *P. exilis*, its nearest ally, in its much smaller size and shorter leaves, the blade almost (or often quite) obsolete. Calyptra conic, covering only the rostrum of the opiculum, very slightly fissured on one side at the base. Teeth of the peristome when dry widely spreading at the base, erect above the middle; when moist inflexed and forming a cone over the mouth of the capsule; sublanceolate, split nearly to the base into two unequal segments, papillose, the articulations below close and indistinct.

5. *Meesia Macouni* (*n. sp.*)—Caule perbrevis dense caespitoso innovante fastigiatim ramoso radiculis rufo-brunneis et purpureis dense et minute scabris instructo, foliis e basi angustata oblongo-lanceolatis subacuminatis planiusculis integerrimis versus apicem subseriatisve laxissime (ut in *Funaria* et *Amblyodonte*) areolatis, areolis medialibus oblongis basilaribus elongatis illis versus marginem sensim angustatis (ut foliis submarginatis videatur) superioribus subrhomboideis, costa valida basi dilatata in apicem producta, perichætalibus brevioribus solidioribus brevius acuminatis crassius costatis, capsula cum collo (pro genere breviusculo) subpyriformi siccata subincurva pachyderma, peristomii dentibus pro genere longis (fere ut in *Amblyodonte*) erectis obtusis integris, processibus quam dentibus longioribus, pedicello 2-3 unciali, paraphysibus compluribus valde clavatis: cætera desunt.

In the Peace River Country, British Columbia, *Macoun* (1872.)

Remarkable for the very lax texture of the leaves, which are also broader than in our other species; also for the longish teeth of the outer peristome. It appears to connect the genus *Meesia* with *Amblyodon*. My specimens are too old, and the peristome is somewhat destroyed, yet it is sufficiently well preserved to show this relationship. I have not been able to detect any antheridia. Among the plants were a few very slender stems of a male plant having small distant distinctly margined bryoid leaves, and apparently belonging to some *Bryum*. The buds resembling male flowers each contained a cluster of minute white fusiform worms instead of antheridia and paraphyses!

6. *Leskea* (*Thedenia*?) *Wollei* (*n. sp.*)—Plantæ parvæ demissæ intricato-caespitosæ vage et subpinnatim ramosæ et ramulosæ; caespite superne fusco-viridi inferne magis minusve ochracei; foliis diversiformibus in caule primario late deltoideo-ovatis abrupte longe acuminatis, acumine valde flexuoso, illis in caule secundario angustioribus brevius acuminatis, ramulinis rigidiusculis ovatis haud vel breviter acuminatis valde concavis imbricatis siccitate subrugulosis, omnibus integerrimis cellulis crassioribus brevioribus confertioribus marginatis costa lata difformi brevi vel longiuscula simplici vel inequaliter bicrura instructis, reti e cellulis mediocribus rhombeis illis ad basis angulos (et in marginem usque ad apicem) quadratis formato: floribus et fructu haud visis.

Niagara Falls, *Rev. Francis Wolle*; Lake Superior region, *Prof. John Macoun*.

Plant of about the size and of much the general appearance of *Hypnum adnatum*, Hedw. The position, shape and areolation of the branch leaves are also much as in that species, but they are more concave, and have the areolation shorter. The stem-leaves are shaped somewhat as in *Hypnum hispidulum*, Brid; but they are more concave, and have a more abrupt, longer, and more flexuose point and entire margins.

Differs from *Thedenia Suecica*, as described in Schimper's Synopsis, mainly in the somewhat rigid and more or less costate leaves.

**7. *Thuidium scitum*** (*Beauv.*).—*Aust. Musc. Appalach.*, n. 300.—*Hypnum scitum*, *Beauv. Brid. Bryol. Univ.* 2, p. 575; *C. Mull. Synop.* 2, p. 488; *Sulliv. Icon. Musc.* p. 155, t. 99, *ex parte*; *Sulliv. & Lesqx, Musc. Exsic.* ed. 2, n. 409, *ex. parte*.—(*Thuidium Appalachianum*, *Aust. Ms. olim.*)

Plantæ mediocres, depresso-cæspitosæ, colore atro et subglaucoviridi. Caulis 1–3 uncias longus prostratus simpliciter pinnato-ramulosus. Folia caulina late cordato-triangularia longe tenuiter apiculato-acuminata, basi late sulcata; ramulina minora cordato-ovata breviter acuminata laxius incumbentia; utraque concava erecto-patentia; costa validiuscula subpellucida ultra medium evanida; reti e cellulis subrotundis minutissimis chlorophyllosis minutissime papillosis formato; paraphyllia numerosa multiformia; perichætialia lævia solidiuscula profunde sulcata valide costata erecto-appressa sensim longe acuminata integerrima vel versus apicem obsoletissime denticulata; reti e cellulis angustissimis linearibus rectis formato. Capsula brunnea subcylindrica (elongato-elliptica) erecta vel leniter curvula siccata sub ore parvo constricta, basi acuta; operculo elongato-conico conicove-rostrato; annulo solido triplici persistente; peristomio leskeoideo albescente, dentibus angustissimis rectis vel siccatis leniter flexuosis, processibus quam dentibus brevioribus e membrana angusta exortis angustis sublinearibus rectis opacis granulosis aperte e serie singula cellularum exstructis haud carinatis, ciliolis binis imperfectis nullisque; sporis viridibus nonnunquamve luteolis. In Octobri et Novembri maturæscat.

On the base of trees along the borders of a swamp, near Closter, New Jersey; very rare. (First found by me in 1864 on the base of a tree, about half a mile south of Closter.) (This tree was cut the following winter.) I again found it in 1872 on a tree about 80 rods south-west of the former station, along the east side of John Westervelt's woods. The following species is found on many of the trees in the same woods, in close proximity to this.

**8. *Thuidium æstivum*** (*n. sp.*).—Statura ramificatione circumscriptione foliorum et habitu *Th. sciti*; recedit tamen foliis perichætialibus tenuioribus minus profunde sulcatis subscabris apice minus obsolete denticulatis, costa tenuiore, reti breviori diversiformi (rotundo ovali et oblongo), caulinis minus valide costatis acumine magis flexuosis, ramulinis densius granuloso-papillosis. Capsula oblonga macrostoma straminea subhorizontali textura laxiore, ore obliquo, basi obtusiore, operculo majore alte convexo abrupte ob-

tuse et brevius rostrato magis deciduo basi submarginato, annulo pallido deciduo, peristomio hypnoideo pallido luteolo, dentibus latoribus conniventibus in humido incurvis (apice recurviusculo exceptis), processibus multum latoribus e membrana latiore exortis incurvis lævibus hyalinis carinatis carina pertusis, ciliolis 2-3 perfectis subæquilongis, sporis luteolis: in Julio maturescat.—*Thuidium scitum*, var. æstivum *Musc. Appalach. n.* 301.—*Hypnum scitum*, *Sulliv. & Lesq. r. Musc. Exsicc. ed. 2, n.* 409, *ex parte*.

On the base of trees in woods, New Jersey to Canada and Ohio; common. Inner perichætical leaves long and narrowly pointed, but less gradually so than in *Th. scitum*. Pedicel of the same color as the capsule (pale yellow), and, as in all the *Thuidia*, obscurely scabrous. Peristome with the processus and ciliolæ nearly or quite as long as the teeth. Paraphyllia multiform. Color of the plant green, glaucous green, or often yellowish green.

**9. Plagiothecium Passaicense**, *Musc. Appalach. n.* 362.—Dioicum, minutulum, cæspitosum; fl. masc. polyphylo eparaphysato antheridiis 1-3 instructo, fl. fem. paraphysibus magis numerosis brevibus et pistillidiis 12-30 instructo, capsula in pedicello brevi tenui erecta minuta siccitate turbinata collo distincto estriato instructa, peristomii dentibus angustis fere rectis erectisque, ciliolis imperfectis, foliis perichæticalibus pluribus late ovatis abrupte acuminatis ecostatis estriatis integerrimis vel apice eroso-denticulatis, foliis caulinis triangulari-lanceolatis subcanaliculato-concavis basi subtruncatis margine integerrimis planis angustissime recurvisve, reti e cellulis longis angustis subfusiformibus basilaribus valde brevioribus nec inflatis nec decurrentibus instructo.

Prof. Macoun, of Canada, has recently sent me fine fruiting specimens of this interesting little moss, found growing on an old stump near Belleville. It resembles both *Pl. pulchellum* and *Pl. latebricola*, but is smaller than either (being the smallest of the genus). Besides it differs from the former in its inflorescence, much shorter and slenderer pedicel, shorter erect capsule with the outer peristomal teeth much narrower and erectish when dry, and with the ciliæ of the inner peristome imperfect, perichætical leaves less convolute and not plicate, stem-leaves narrower, etc.; from the latter it differs chiefly in the texture of the leaves, which are also neither decurrent nor furnished with inflated cellules at the base.

**10. Hylocomnium Flemmingii** (*n. sp.*)—Robustum pallidum; caule subsimplici erecto rigido apice valde obtuso, foliis e basi cordata late lanceolato-ovatis obtuse acuminatis valde flexuoso-squarrosis subfalcatis profunde sulcatis versus apicem minutissime papillosis nitidis bicostatis ad basis angulos minute angustequae subquadrato-areolatis, margine minute confertim serrulata ad basin late reflexa et ciliis minutis subdecompositis ornata, costis distantissimis tenuibus vix ad medium productis basi ciliatis; floribus et fructu ignotis.

Vancouver's Island, 1872, *John Macoun*.

Remarkable for the obtuse apex of the leaf, with minute decomposed ciliæ on the margins and costæ at the base. The costæ are wholly distinct at the base throughout, wide apart and nearly parallel.